

AMENDMENT TO THE CLAIMS

Claims 1-49 (canceled)

50. (new) An electrically programmable memory element, comprising:

a first dielectric layer having an opening;

a conductive layer disposed on a sidewall surface of said opening;

a second dielectric layer disposed on said conductive layer within said opening,

said conductive layer including a first portion on said sidewall surface and a second portion on said sidewall surface, said second portion raised above the upper surface of said first portion; and

a programmable resistance memory material electrically coupled to said conductive layer.

51. (new) The memory element of claim 50, wherein said programmable resistance material is electrically coupled to an upper surface of said second portion of said conductive layer.

52. (new) The memory element of claim 50, wherein substantially all electrical communication between said programmable resistance material and said conductive layer is through an upper surface of said second portion of said conductive layer.

53. (new) The memory element wherein said opening is a hole.

54. (new) The memory element of claim 50, wherein said opening is a trench.

55. (new) The memory element of claim 50, wherein said conductive layer is formed on a bottom of said opening.

56. (new) The memory element of claim 50, wherein said conductive layer is a conductive liner.

57. (new) The memory element of claim 50, wherein said conductive layer is a conductive spacer.

58. (new) The memory element of claim 50, wherein said conductive layer is cup-shaped.

59. (new) The memory element of claim 50, wherein said programmable resistance memory material is a phase-change material.

60. (new) The memory element of claim 50, wherein said programmable resistance memory material includes a chalcogen element.

61. (new) An electrically programmable memory element, comprising:

    a substrate;

    a cup-shaped electrical contact electrically coupled to said substrate, said cup-shaped contact having an open-end

facing away from said substrate, said contact including one or more protrusions extending upward from the rim of said cup-shaped contact;

a dielectric material disposed on the interior surface of said cup-shaped contact; and

a programmable resistance material electrically coupled to at least one of said protrusions.

62. (new) The memory element of claim 61, wherein said programmable resistance material is electrically coupled to an upper surface of at least one of said protrusions.

63. (new) The memory element of claim 61, wherein substantially all electrical communication between said programmable resistance material and said electrical contact is through an upper surface of at least one of said protrusions.

64. (new) The memory element of claim 61, wherein said programmable resistance material is a phase-change material.

65. (new) The memory element of claim 61, wherein said programmable resistance material comprises a chalcogen element.